piping in Table 501.2.4 of ANSI–B31.5 (Refrigeration Piping). In no case shall pressure components be designed for a pressure less than that for which the safety devices of the system are set. Pressure vessels will be designed in accordance with part 54 of this subchapter.

(b) For refrigeration systems other than those for reliquefaction of cargo, only those refrigerants under § 147.90 of this chapter are allowed.

[CGFR 68–82, 33 FR 18878, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9980, June 17, 1970; CGD 84–044, 53 FR 7748, Mar. 10, 1988]

§ 58.20–10 Pressure relieving devices.

(a) Each pressure vessel containing refrigerants, which may be isolated, shall be protected by a relief valve set to relieve at a pressure not exceeding the maximum allowable working pressure of the vessel. When a pressure vessel forms an integral part of a system having a relief valve, such vessel need not have an individual relief valve.

(b) Relief valves fitted on the high pressure side may discharge to the low pressure side before relieving to atmosphere. When relieving to atmosphere, a relief valve shall be fitted in the atmospheric discharge connection from the receivers and condensers. The relief valve from the receivers may relieve to the condenser which in turn may relieve either to the low side or to atmosphere. It shall be set to relieve at a pressure not greater than the maximum allowable working pressure. A rupture disk may be fitted in series with the relief valve, provided the bursting pressure of the rupture disk is not in excess of the relief valve set pressure. Where a rupture disk is fitted on the downstream side of the relief valve, the relief valve shall be of the type not affected by back pressure.

§ 58.20–15 Installation of refrigerating machinery.

(a) Where refrigerating machines are installed in which anhydrous ammonia is used as a refrigerant, such machines shall be located in a well-ventilated, isolated compartment, preferably on the deck, but in no case shall it be permissible to install such machines in the engineroom space unless the arrangement is such as to eliminate any hazard from gas escaping to the engineroom. Absorption machines using a solution of aqua ammonia and machines using carbon dioxide are exempt from this requirement, provided the maximum charges that might be released in the event of breakage do not exceed 300 pounds.

(b) Machinery compartments containing equipment for ammonia shall be fitted with a sprinkler system providing an effective water spray and having a remote control device located outside the compartment.

(c) All refrigeration compressor spaces shall be effectively ventilated and drained and shall be separated from the insulated spaces by a waterweight bulkhead, unless otherwise approved.

§ 58.20–20 Refrigeration piping.

(a) All piping materials shall be suitable for handling the primary refrigerant, brine, or fluid used, and shall be of such chemical and physical properties as to remain ductile at the lowest operating temperature.

(b) Piping systems shall be designed in accordance with ANSI–B31.5. Piping used for cargo reliquefaction systems shall also comply with the applicable requirements found in low temperature piping, § 56.50–105 of this subchapter.

(c) A relief valve shall be fitted on or near the compressor on the gas discharge side between the compressor and the first stop valve with the discharge therefrom led to the suction side. A check valve shall be fitted in the atmospheric discharge line if it is led through the side of the vessel below the freeboard deck, or a shutoff valve may be employed if it is locked in the open position.

[CGFR 68–82, 33 FR 18878, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9980, June 17, 1970]

§ 58.20–25 Tests.

(a) All pressure vessels, compressors, piping, and direct expansion cooling coils shall be leak tested after installation to their design pressures, hydrostatically or pneumatically.

(b) No pneumatic tests in refrigeration systems aboard ships shall be made at pressures exceeding the design pressure of the part of the system